

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NM-157-AD; Amendment 39-13360; AD 2003-22-12]

RIN 2120-AA64

Airworthiness Directives; Bombardier Model CL-600-1A11 (CL-600), CL-600-2A12 (CL-601), and CL-600-2B16 (CL-601-3A, CL-601-3R, and CL-604) Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Bombardier Model CL-600-1A11 (CL-600), CL-600-2A12 (CL-601), and CL-600-2B16 (CL-601-3A, CL-601-3R, and CL-604) series airplanes. This amendment requires revising the airplane flight manual to provide the flightcrew with procedures and limitations for operating the airplane with out-of-tolerance angle of attack (AOA) transducers. This amendment also requires, among other actions, measuring the vane angles and voltage of the AOA transducers; reworking the AOA transducer assemblies; repetitive measurements of the resistance of both AOA transducers; and follow-on and corrective actions, as applicable. This action is necessary to prevent flat spots on the potentiometers of the AOA transducers due to wear, which may cause a delay in the commands for stall warning, stick shaker, and stick pusher operation. This action is intended to address the identified unsafe condition.

DATES: Effective December 12, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of December 12, 2003.

ADDRESSES: The service information referenced in this AD may be obtained from Bombardier, Inc., Canadair, Aerospace Group, PO Box 6087, Station Centreville, Montreal, Quebec H3C 3G9, Canada. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, New York Aircraft Certification Office, 10 Fifth Street, Third Floor, Valley Stream, New York; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Luciano Castracane, Aerospace Engineer, Systems and Flight Test Branch, ANE-172, FAA, New York Aircraft Certification Office, 10 Fifth Street, Third Floor, Valley Stream, New York 11581; telephone (516) 256-7535; fax (516) 568-2716.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain Bombardier Model CL-600-1A11 (CL-600), CL-600-2A12 (CL-601), and CL-600-2B16 (CL-601-3A, CL-601-3R, and CL-604) series airplanes was published in the Federal Register on February 28, 2003 (68 FR 9602). That action proposed to require revising the airplane flight manual to provide the flightcrew with procedures and limitations for operating the airplane with out-of-tolerance angle of attack (AOA) transducers. That action also proposed to require, among other actions, measuring the vane angles and voltage of the AOA transducers; reworking the AOA transducer assemblies; repetitive measurements of the resistance of both AOA transducers; and follow-on and corrective actions, as applicable.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the single comment received.

The commenter concurs with the proposed rule.

Conclusion

After careful review of the available data, including the comment noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Changes to 14 CFR Part 39/Effect on the AD

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. However, for clarity and consistency in this final rule, we have retained the language of the NPRM regarding that material.

Increase in Labor Rate

After the proposed AD was issued, we reviewed the figures we use to calculate the labor rate to do the required actions. To account for various inflationary costs in the airline industry, we find it appropriate to increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The economic impact information, below, has been revised to reflect this increase in the specified hourly labor rate.

Cost Impact

The FAA estimates that 424 airplanes of U.S. registry will be affected by this AD, and that the average labor rate is \$65 per work hour. The estimated cost impact for airplanes affected by this AD are as follows:

TABLE—COST IMPACT

Actions	Work hour(s)	Parts cost	Total cost per airplane
AFM revision	1	None	\$65
Measurement of the vane angles and voltage of AOA transducers (Part A)	5	None	325
Rework the AOA transducer assemblies and measurement of the baseline resistance of the applicable AOA transducers (Part B)	17	\$161	1,266
Measurement of the resistance of both AOA transducers (Part C)	1	None	65
Inspection of the left- and right-side AOA vane decal	1	None	65

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions. Manufacturer warranty remedies may be available for labor costs associated with this AD. As a result, the costs attributable to the AD may be less than stated above.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-22-12 Bombardier, Inc. (Formerly Canadair): Amendment 39-13360. Docket 2002-NM-157-AD.

Applicability: This AD applies to the airplanes listed in Table 1 of this AD, certificated in any category. Table 1 is as follows:

TABLE 1.—APPLICABILITY

Model	Serial Nos.
CL-600-1A11 (CL-600) series airplanes	1004 through 1085 inclusive.
CL-600-2A12 (CL-601) series airplanes	3001 through 3066 inclusive.
CL-600-2B16 (CL-601-3A and -3R) series airplanes	5001 through 5194 inclusive.
CL-600-2B16 (CL-604) series airplanes	5301 and subsequent.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (n) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent flat spots on the potentiometers of the AOA transducers due to wear, which may cause a delay in the commands for stall warning, stick shaker, and stick pusher operation, accomplish the following:

Revision of Airplane Flight Manual (AFM)

(a) Before the accumulation of 300 total flight hours, or within 7 days after the effective date of this AD, whichever occurs later: Revise the Limitations, Emergency Procedures, Normal Procedures, and Abnormal Procedures Sections of the applicable Canadair Challenger AFM by inserting a copy of the Temporary Revisions listed in Table 2 of this AD, as applicable. Table 2 is as follows (some Temporary Revisions listed in Table 2 of this AD contain Product Support Publication (PSP) identifiers):

TABLE 2.—TEMPORARY REVISIONS

Model	PSP	Temporary revision	Date
CL-600-1A11 (CL-600) series airplanes	None	600/20	Nov. 26, 2001.
	None	600/21	Nov. 26, 2001.
	PSP 600-1-18	600-1/13	Nov. 26, 2001.
	None	600-1/17	Nov. 26, 2001.
CL-600-2A12 (CL-601) series airplanes	None	601/25	Nov. 26, 2001.
	PSP 601-1A-1	601/13	Nov. 26, 2001.
	PSP 601-1A-17	601/24	Nov. 26, 2001.
	PSP 601-1A-18	601/25	Nov. 26, 2001.
	PSP 601-1B	601/17	Nov. 26, 2001.
	PSP 601-1B-1	601/12	Nov. 26, 2001.
CL-600-2B16 (CL-601-3A and -3R) series airplanes	PSP 601A-1	601/23	Nov. 26, 2001.
	PSP 601A-1-1	601/22	Nov. 26, 2001.
	PSP 601A-1-17	601/22	Nov. 26, 2001.
	PSP 601A-1-18	601/21	Nov. 26, 2001.
	PSP 601A-1-18A	601/24	Nov. 26, 2001.
	PSP 601A-1-20A	601/15	Nov. 26, 2001.
CL-600-2B16 (CL-604) series airplanes	PSP 604-1	604/9	Nov. 26, 2001.

Measurement

(b) Before the accumulation of 300 total flight hours, or within 200 flight hours after the effective date of this AD, whichever occurs later: Measure the vane angles and voltage of the angle of attack (AOA) transducers by doing all actions specified in "PART A—Initial Special Check" of the Accomplishment Instructions of the applicable alert service bulletin listed in Table 3 of this AD, per the applicable Bombardier alert service bulletin. Table 3 is as follows:

TABLE 3.—ALERT SERVICE BULLETINS

For model	Alert service bulletin	Date	Including
CL-600-1A11 (CL-600) series airplanes	A600-0715	Jan. 7, 2002	Appendices A and B.
CL-600-2A12 (CL-601) series airplanes, and CL-600-2B16 (CL-601-3A and -3R) series airplanes.	A601-0550	Jan. 7, 2002	Appendices A and B.
CL-600-2B16 (CL-604) series airplanes	A604-27-011	Jan. 7, 2002	Appendices A and B.

Any Voltage Outside Tolerances: Replacement

(c) If, during the measurement required by paragraph (b) of this AD, any recorded voltage is found to be outside the tolerances specified in the applicable Bombardier alert service bulletin identified in Table 3 of this AD, before further flight: Replace the stall protection computer (SPC) with a new SPC and do the follow-on actions (i.e., recording in Appendix A and repeat actions), per "PART A—Initial Special Check" of the Accomplishment Instructions of the applicable Bombardier alert service bulletin identified in Table 3 of this AD.

All AOA Vane Angles Within Tolerances: Disconnection and Measurement

(d) If, during the measurement required by paragraph (b) of this AD, all of the recorded AOA vane angles for both AOA transducers are found to be within the tolerances specified in the applicable Bombardier alert service bulletin listed in Table 3 of this AD, before further flight: Do the follow-on actions (i.e., disconnect breakout box, and measure the baseline resistance of the AOA transducer between certain pins), per "PART B–AOA Transducer Assembly Rework/Baseline Resistance Check" of the Accomplishment Instructions of the applicable Bombardier alert service bulletin identified in Table 3 of this AD. After doing the follow-on actions, the applicable AFM revision required by paragraph (a) of this AD may be removed from the AFM.

One or More AOA Vane Angles Outside Tolerances, But All AOA Vane Angles Within Expanded Tolerances

(e) If, during the measurement required by paragraph (b) of this AD, one or more of the recorded AOA vane angles for either or both AOA transducers are found to be outside the tolerances specified in the applicable Bombardier alert service bulletin listed in Table 3 of this AD, but all recorded AOA vane angles are within the expanded tolerances specified in "Table A–Tolerances" of "PART A–Initial Special Check" of the Accomplishment Instructions of the applicable Bombardier alert service bulletin identified in Table 3 of this AD: Do the action specified in paragraph (e)(1) of this AD, except as provided by paragraph (e)(2) of this AD.

(1) Before further flight, do the actions specified in paragraph (g) of this AD.

(2) In lieu of doing the actions required by paragraph (e)(1) of this AD, do the actions specified in paragraphs (e)(2)(i) and (e)(2)(ii) of this AD.

(i) Before further flight, measure the baseline resistance of the other AOA transducer (with recorded AOA vane angles within the tolerances specified in the applicable Bombardier alert service bulletin listed in Table 3 of this AD) per "Table A–Tolerances" of "PART A–Initial Special Check" of the Accomplishment Instructions of the applicable Bombardier alert service bulletin identified in Table 3 of this AD.

(ii) Within 150 flight hours after doing the measurement required by paragraph (b) of this AD, do the actions specified in paragraph (g) of this AD.

Any AOA Vane Angle Outside Tolerances

(f) If, during the measurement required by paragraph (b) of this AD, any recorded AOA vane angle of the AOA transducers is found to be outside the expanded tolerances specified in "Table A–Tolerances" of "PART A–Initial Special Check" of the applicable Bombardier alert service bulletin listed in Table 3 of this AD, before further flight: Do the actions specified in paragraph (g) of this AD.

Transducer Assembly Rework and Baseline Resistance Measurement

(g) Except as provided by paragraph (e)(2) of this AD, before further flight after doing the measurement required by paragraph (b) of this AD: Rework the AOA transducer assemblies and measure the baseline resistance of the applicable AOA transducers by doing all actions specified in "PART B–AOA Transducer Assembly Rework/Baseline Resistance Check" of the Accomplishment Instructions of the applicable Bombardier alert service bulletin identified in Table 3 of this AD, per the applicable Bombardier alert service bulletin. After doing the rework, the applicable AFM revision required by paragraph (a) of this AD may be removed from the AFM.

Repetitive Measurements and Corrective Actions

(h) Within 300 flight hours after doing the measurement required by paragraph (b) of this AD: Measure the resistance of both AOA transducers by doing all actions specified in "PART C–Repetitive Resistance Check/AOA Transducer Assembly Rework" of the Accomplishment Instructions of the applicable alert service bulletin listed in Table 3 of this AD, per the applicable Bombardier alert service bulletin. Repeat the measurement at least every 300 flight hours.

(i) If, during the measurement required by paragraph (h) of this AD, any recorded resistance is found to be outside the tolerances specified in the applicable Bombardier alert service bulletin listed in Table 3 of this AD (i.e., more than 20 ohms from its baseline resistance value), before further flight: Do corrective actions (e.g., replace AOA transducer with new AOA transducer; perform a visual inspection of the vane assembly; rework, if necessary; a test; and measure baseline resistance of applicable AOA transducer), as applicable, per PART C–Repetitive Resistance Check/AOA Transducer Assembly Rework" of the Accomplishment Instructions of the applicable alert service bulletin listed in Table 3 of this AD.

Concurrent Requirements: Inspection

(j) For airplanes identified in paragraphs (j)(1), (j)(2), and (j)(3) of this AD: Before or at the same time with accomplishment of the requirements of paragraph (b) of this AD, inspect the left- and right-side AOA vane decal to verify that the correct decal is installed per paragraph (j)(1), (j)(2), or (j)(3) of this AD, as applicable.

(1) For Model CL-600-2A12 (CL-601) and CL-600-2B16 (CL-601-3A and -3R) series airplanes having serial numbers 3001 through 3066 inclusive, and 5001 through 5194 inclusive, respectively, on which AOA calibration decals, part numbers (P/N) 600-52267-5 and 600-52267-6, have been installed: Inspect per Bombardier Alert Service Bulletin A601-0519, dated July 30, 1999.

(2) For Model CL-600-1A11 (CL-600) series airplanes having serial numbers 1004 through 1085 inclusive, on which AOA calibration decals, P/Ns 600-52267-5 and 600-52267-6, have been installed: Inspect per Bombardier Alert Service Bulletin A600-0693, dated July 30, 1999.

(3) For Model CL-600-2B16 (CL-604) series airplanes having serial numbers 5301 through 5990 inclusive, on which AOA calibration decals, P/Ns 600-52267-5 and 600-52267-6, have been installed: Inspect per Bombardier Alert Service Bulletin A604-11-009, dated July 30, 1999.

Concurrent Requirements: Corrective Actions

(k) If either of the AOA vane decals is found to be incorrect during the inspection required by paragraph (j) of this AD, before further flight: Replace the AOA vane decal(s) with new vane decal(s), and ensure that the new decal(s) is the correct type, per the applicable alert service bulletin identified in paragraph (j)(1), (j)(2), or (j)(3) of this AD; except as provided by paragraph (l) of this AD.

(l) If replacement decals are not available, before further flight: Remove existing decals and do the alignment check(s) of the AOA vane transducers per the applicable alert service bulletin identified in paragraph (j)(1), (j)(2), or (j)(3) of this AD.

Parts Installation

(m) As of the effective date of this AD, no person shall install an AOA transducer assembly on any airplane, unless the actions required by paragraphs (b) through (l) of this AD, as applicable, have been done.

Alternative Methods of Compliance

(n) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, New York Aircraft Certification Office (ACO), FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, New York ACO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the New York ACO.

Special Flight Permits

(o) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(p) The actions shall be done in accordance with the following Bombardier service bulletins and Temporary Revisions to the applicable Canadair Challenger Airplane Flight Manual, as applicable:

TABLE 4.—SERVICE DOCUMENTS

Document No.	PSP	Document date
Alert Service Bulletin A600–0693	None	July 30, 1999.
Alert Service Bulletin A600–0715, including Appendices A and B	None	Jan. 7, 2002.
Alert Service Bulletin A601–0519	None	July 30, 1999.
Alert Service Bulletin A601–0550, including Appendices A and B	None	Jan. 7, 2002.
Alert Service Bulletin A604–11–009	None	July 30, 1999.
Alert Service Bulletin A604–27–011, including Appendices A and B	None	Jan. 7, 2002.
Temporary Revision 600/20	None	Nov. 26, 2001.
Temporary Revision 600/21	None	Nov. 26, 2001.
Temporary Revision 600–1/13	PSP 600–1–18	Nov. 26, 2001.
Temporary Revision 600–1/17	None	Nov. 26, 2001.
Temporary Revision 601/12	PSP 601–1B–1	Nov. 26, 2001.
Temporary Revision 601/13	PSP 601–1A–1	Nov. 26, 2001.
Temporary Revision 601/15	PSP 601A–1–20A	Nov. 26, 2001.
Temporary Revision 601/17	PSP 601–1B	Nov. 26, 2001.
Temporary Revision 601/21	PSP 601A–1–18	Nov. 26, 2001.
Temporary Revision 601/22	PSP 601A–1–1	Nov. 26, 2001.
Temporary Revision 601/22	PSP 601A–1–17	Nov. 26, 2001.
Temporary Revision 601/23	PSP 601A–1	Nov. 26, 2001.
Temporary Revision 601/24	PSP 601–1A–17	Nov. 26, 2001.
Temporary Revision 601/24	PSP 601A–1–18A	Nov. 26, 2001.
Temporary Revision 601/25	None	Nov. 26, 2001.
Temporary Revision 601/25	PSP 601–1A–18	Nov. 26, 2001.
Temporary Revision 604/9	PSP 604–1	Nov. 26, 2001.

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Bombardier, Inc., Canadair, Aerospace Group, PO Box 6087, Station Centre-ville, Montreal, Quebec H3C 3G9, Canada. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, New York Aircraft Certification Office, 10 Fifth Street, Third Floor, Valley Stream, New York; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Note 3: The subject of this AD is addressed in Canadian airworthiness directive CF-2002-05, dated January 18, 2002.

Effective Date

(q) This amendment becomes effective on December 12, 2003.

Issued in Renton, Washington, on October 29, 2003.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-27668 Filed 11-6-03; 8:45 am]

BILLING CODE 4910-13-P